



Indian Farmer  
Volume 8, Issue 01, 2021, Pp. 67-73.  
Available online at: [www.indianfarmer.net](http://www.indianfarmer.net)  
ISSN: 2394-1227 (Online)

**POPULAR ARTICLE**

## Nutritional Benefits and Value added products of Strawberry

Nishu, Monika Sood, Julie D. Bandral and Duwa

*Division of Food Science and Technology*

*Faculty of Agriculture*

*SK University of Agricultural Sciences and Technology of Jammu, Chatha, Jammu*

*\*Corresponding author: [nishu23041994@gmail.com](mailto:nishu23041994@gmail.com)*

*Article Received on: 31 December 2020*

*Published on: 1 January 2021*

Strawberry is an important fruit that belongs to the family *Rosaceae* and genus *Fragaria*. It occupies an important place among the small fruit plants and it is grown throughout the world. The fruit is attractive, luscious, tasty, highly nutritious, deep red in colour, highly perishable with a unique shape and it has a distinct, pleasant aroma and delicate flavor. Besides being an attractive fruit due to its colour and flavor, strawberry is economically and commercially important and widely consumed fresh or in processed forms such as jams, juices, jellies etc. The strawberry represents a relevant source of micronutrients such as minerals, vitamin C, folate and phenolic substances that contributes to the high nutritional quality of the fruit. It is a good source of essential nutrients, antioxidants, bioactive compounds and beneficial phytochemicals, which have relevant biological activity in human health.

### **NUTRITIONAL COMPOSTION OF STRAWBERRY**

Strawberries represent a healthy food choice. Strawberries contain 80-90% water, 0.9-1.2% fibre, 4.5-10% sugar, 0.17-0.25% tannins (Galoburda *et al.*, 2014). Strawberries contains 97% edible portion, total soluble solids (7-10.2°B), titratable acidity (0.52-2.26%), protein (0.67g/100g), ash (0.40g/100g), total lipids (0.30g/100g), carbohydrates (7.68g/100g), dietary fiber (2g/100g), sugars (4.89g/100g), vitamin C (58.8mg/100g), folate (24µg/100g) and it exhibits low calorific value of 32kcal/100g of edible portion i.e. they are low in total calories, with a 100g serving provides only 32 kcal. (Giampieri *et al.*, 2012). Strawberries also contain a range of powerful antioxidants including anthocyanins, ellagic acid, quercetin and kaempferol.

**Health benefits of strawberry:** Strawberries provides a range of potential benefits that can support our body against a variety of diseases. Some of the benefits are:

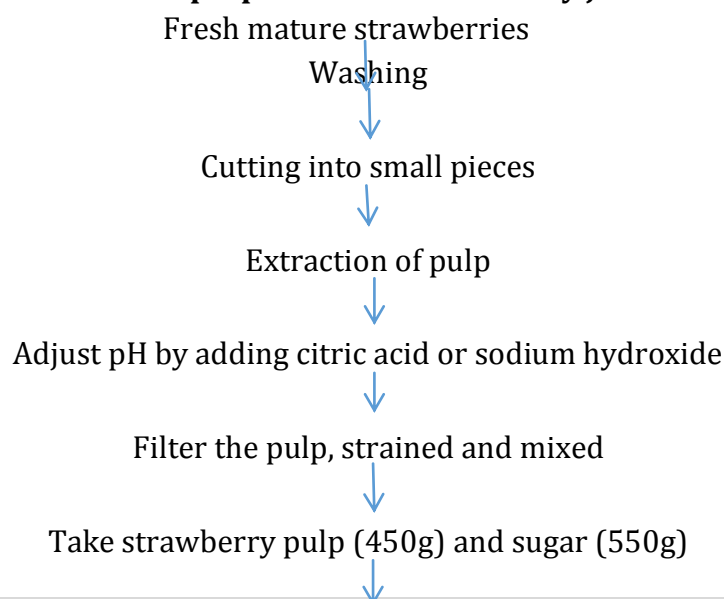
- The flavonoid quercetin is present in strawberries, which is a natural anti-inflammatory that reduce the risk of athlerosclerosis.
- The anthocyanin in strawberries reduces the risk of heart attack (myocardial infarction). The fiber and potassium content in strawberries also support heart health.
- The powerful antioxidants in strawberries work against free radicals which inhibit tumor growth and also decrease inflammation in the body.
- Due to the presence of high polyphenol content, strawberries have a preventive effect against the heart disease.
- Due to high potassium content, strawberries provide benefits to people who have a raised risk of high blood pressure by helping to offset the effects of sodium in the body.
- Strawberries are helpful in maintaining the regular bowel movements and also help to hydrate the body due to the presence of high water content and fiber.
- The strawberry provides a potential contribution to the dietary management of hyperglycemia linked to type-2 diabetes and related complications of hypertension.

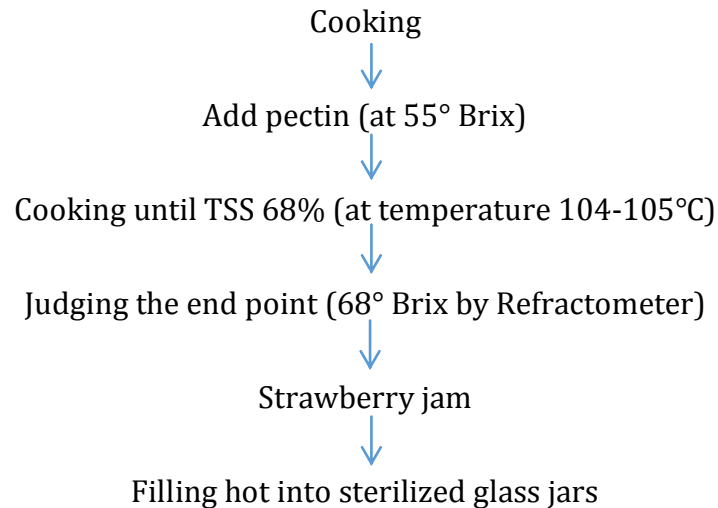
## PROCESSING OF STRAWBERRY FRUIT

A number of value added products can be developed from strawberry fruit for long term usage. The processing of Strawberry fruit into various value added products minimises the post harvest losses and provide benefits to the growers. At the same time the processed strawberry products will provide nutritional and therapeutic benefits to the consumers. Some of the value added products from strawberry are:

- I. **Strawberry Jam:** Jam is a sweet product that can be made by cooking fruit pulp with sufficient sugar to a reasonable thick consistency and is usually spread on bread.

### Flow-sheet for the preparation of Strawberry jam

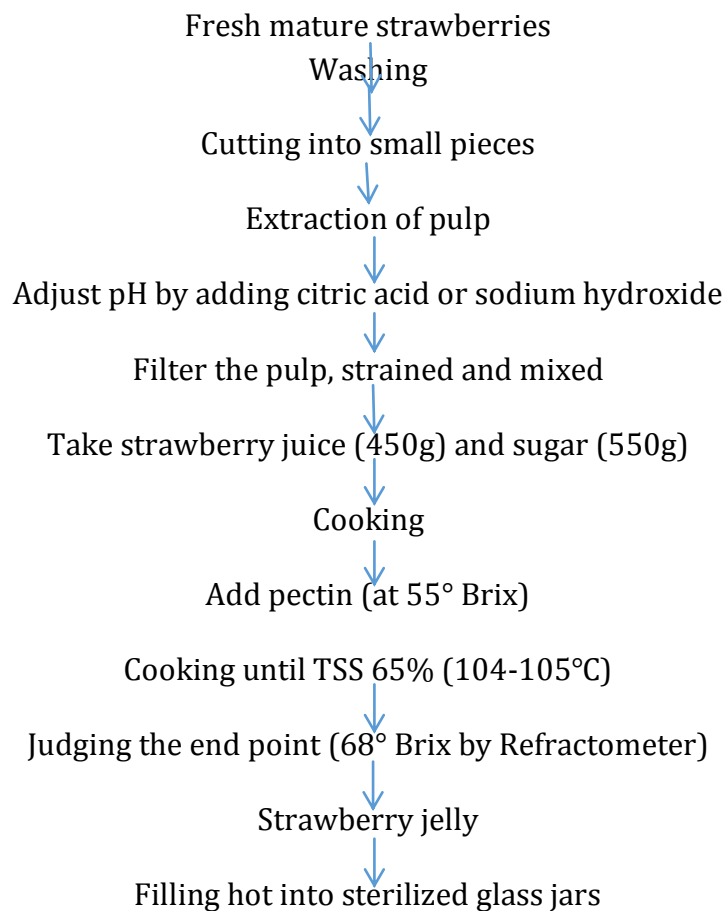




Islam et al. 2012

- II. Strawberry Jelly:** Jelly is a semi-solid product that can be prepared by boiling a clear, strained solution of fruit extract free from pulp, after the addition of sugar and acid.

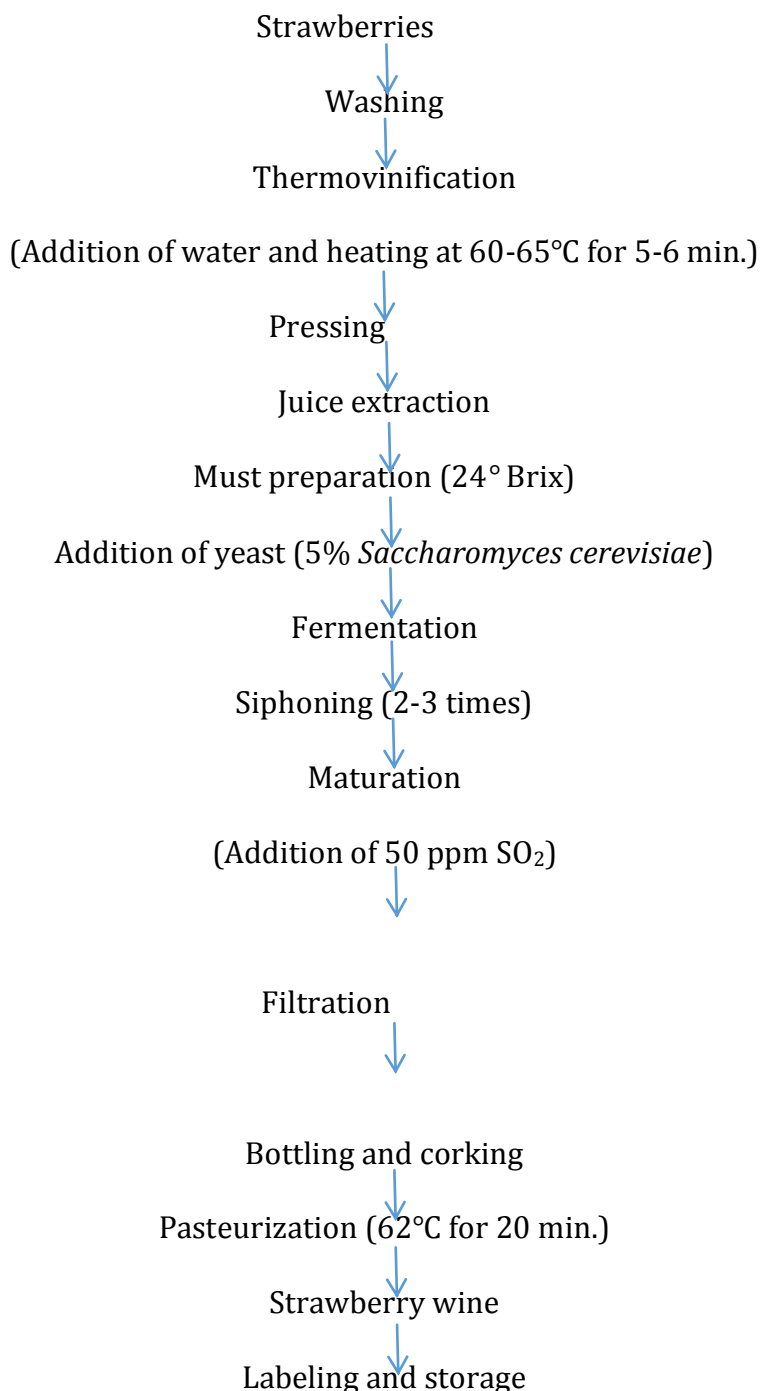
**Flow-sheet for the preparation of Strawberry jelly**



Islam et al., 2012

- III. Strawberry wine:** Wine is an alcoholic drink that is usually made from grapes, but can also be made from other fruits or flowers. It is made by fermenting the fruit with water and sugar.

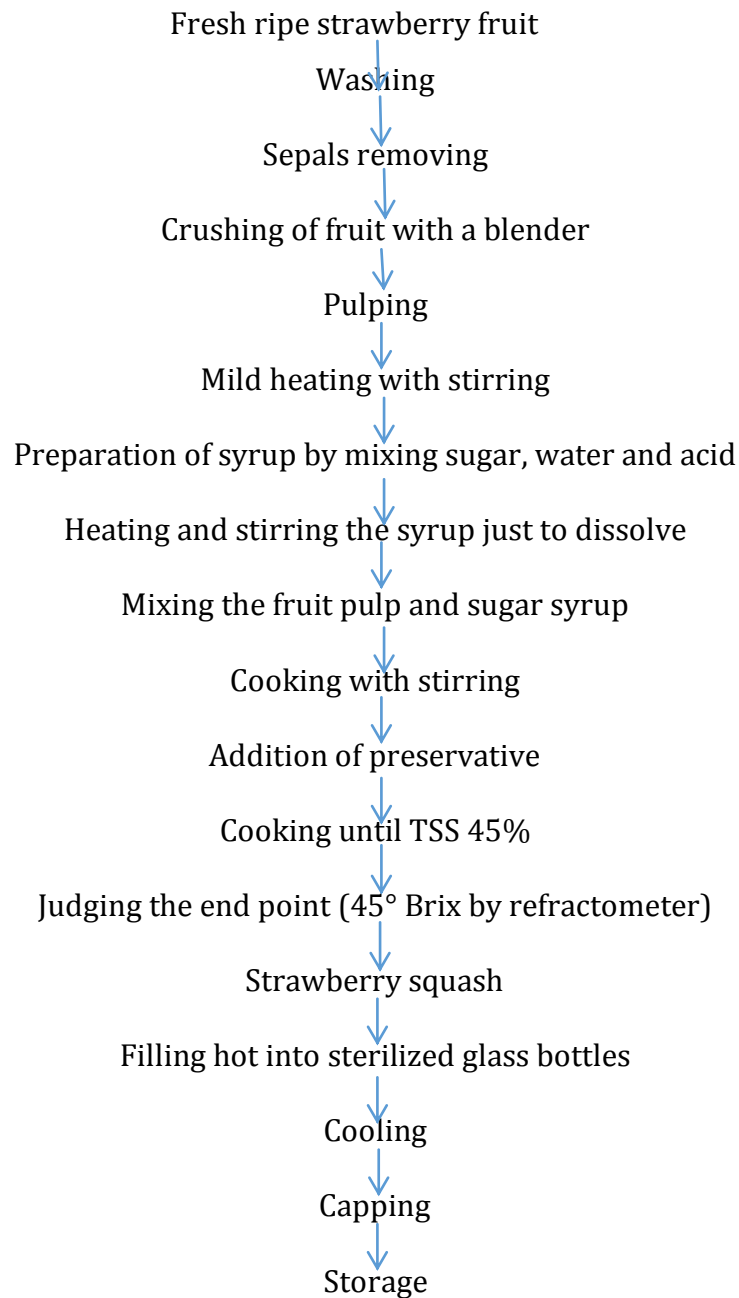
**Flow-sheet for the manufacture of strawberry wine**



Sharma *et al.* 2009

- IV. Strawberry squash:** Squash is non-alcoholic concentrated syrup that is usually fruit-flavoured and usually made from fruit juice, water and sugar or a sugar substitute.

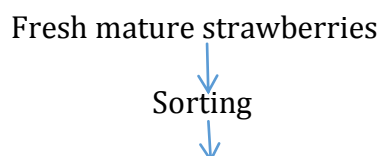
### Flow-sheet for the preparation of strawberry Squash

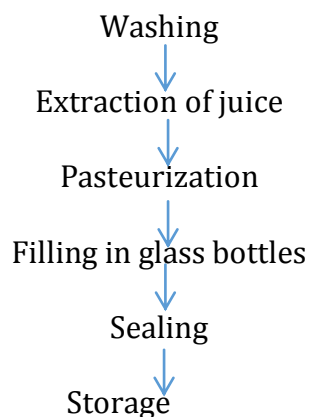


Hossain et al. 2015

- V. **Strawberry juice:** Juice is a drink made from the extraction or pressing of the natural liquid contained in fruits.

### Flow-sheet for preparation of strawberry juice





Ayub et al. 2010

## CONCLUSION

Strawberry is highly nutritional, so it can be used as a healthy fruit that can be typically used in an effort to maintain or improve human health and can be incorporated in different products to improve flavor and taste. It can also be considered as an important fruit in the Mediterranean diet because of its high content of essential nutrients, antioxidants, bioactive compounds and beneficial phytochemicals, which have relevant biological activity in human health. So, the bioavailability of strawberry phytochemicals will be crucial to enable the development of new value added products that will enable the consumers to gain more health benefits from strawberry consumption.

## REFERENCES

- Ayub, M., Ullah, J., Muhammad, A. and Zeb, A. 2010. Evaluation of strawberry juice preserved with chemical preservatives at refrigeration temperature. *International Journal of Nutrition and Metabolism*, **2**(2): 27-32.
- Galoburda, R., Boca, S., Skrupskis, I. and Seglina, D. 2014. Physical and chemical parameters of strawberry puree. *Foodbalt Proceedings* pp. 172-177. University of Agriculture, Latvia.
- Giampieri, F., Tulipani, S., Alvarez-Suarez, J.M., Quiles, J.L., Mezzetti, B. and Battino, M. 2012. The strawberry: Composition, nutritional quality and impact on human health. *Journal of Nutrition*, **28**: 9-19.
- Giampieri, F., Alvarez-Suarez, J.M., Mazzoni, L., Romandini, S., Bompadre, S., Diamanti, J., Capocasa, F., Mezzetti, B., Quiles, J.L., Ferreiro, M.S., Tulipani, S. and Battino, M. 2013. The potential impact of strawberry on human health. *Natural Product Research*, **27**(4-5): 448-445.
- Hossain, M. A., Islam, M. N., Rahman, M. M., Rahman, M. A. and Arfin, S. 2015. Processing of strawberry into squash and nutritive value of squash during storage. *Annals of Bangladesh Agriculture*, **19**(2): 45-53
- Islam, M. Z., Monalisa, K. and Hoque, M. M. 2012. Effect of pectin on the processing and preservation of strawberry jam and jelly. *International Journal of Natural Sciences*, **2**(1): 08-14.

Khalid, S., Qureshi, K. M., Hafiz, I. A., Khan, K. S. and Qureshi, U. S. 2013. Effect of organic amendments of vegetative growth, fruit and yield quality of strawberry. *Pakistan Journal of Agricultural Resources*, **26**(2): 104-112.

Sharma, S., Joshi, V. K. and Abrol, G. 2009. An Overview on strawberry wine production technology, composition, maturation and quality evaluation. *Natural Product Radiance*, **8**(4): 356-365.